

REMARKS

The Office Action dated June 11, 2003 has been received and carefully noted. The above amendments and the following remarks are submitted as a full and complete response thereto. By this Amendment, claims 3-10 have been cancelled and claims 11 and 12 are newly added. Claim 11 substantially incorporates the subject matter of claims 3-5, and claim 12 substantially incorporates the subject matter of claims 7-9. No new matter has been added or amendments made that narrow the scope of any elements of any claims. Accordingly, claims 11 and 12 are pending in this application and are submitted for consideration.

Claims 3-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicants' admitted prior art (AAPA) in view of Ruehl et al. (U.S. Patent No. 6,216,763 "Ruehl") or Leith (U.S. Patent No. 6,173,628). In making this rejection, the Office Action took the position that the prior art discloses the claimed invention, except for a molding technique to join the frame members. Ruehl and Leith were cited for teaching this limitation.

By this Amendment, claims 4-6 and 8-10 have been cancelled. Therefore, the rejection regarding these claims is moot. However, as will be discussed below, Applicants respectfully submit that newly added claims 11 and 12 recite subject matter that is neither disclosed nor suggested by any combination of the prior art.

Applicants' newly added claim 11 recites a method for joining a door sash with frame members of door components, said method comprising the steps of: fitting a part of each of the frame members into a mold; forming a bent end part at an end part of said door sash; fitting the bent end part to a fitting groove provided within the mold,

wherein said fitting groove has the same shape as the bent end part of the door sash, and almost all of the bent end part is supported within said fitting groove; and wrapping up the part of the frame members and said bent end part of the door sash in cast metal, wherein the bent end part of the door sash does not contact the part of the frame members fitted in the mold, and wherein the door sash and the frame members are made of aluminum alloy.

Applicants' newly added claim 12 recites a method for joining a door sash with frame members of door components, the method comprising the steps of: fitting a part of each of the frame members into a mold; forming a bent end part at an end part of the door sash; fitting the bent end part to a fitting groove provided within the mold, wherein the fitting groove has the same shape as the bent end part of the door sash, and almost all of the bent end part is supported within the fitting groove; pouring a molten metal into the mold and wrapping up the part of the frame members and the bent end part of said door sash, which are fitted in the mold; solidifying the molten metal in the mold; and removing the mold, leaving a cast joining member by which the bent end part of the door sash and each of the frame members are joined together, wherein the bent end part of the door sash does not contact with the part of the frame members fitted in the mold, and wherein the door sash and the frame members are made of aluminum alloy.

As a result of the claimed process, each of the frame members can be joined without forming the intricate configuration on an end part of the frame members, and without using a joining member. Consequently, the frame members are joined without a welding procedure and the manufacturing process is thus simplified. Each of the frame members is joined with superior positional precision without using a specific joining part,

because each of the frame members is joined by wrapping up the part of the frame members and the bent part of the sash in cast metal. Moreover, if an irregularity of the shape occurs at the end part of the frame members when casting, the irregularity of the shape can be absorbed within a mold.

In the present invention, as shown in Figs. 2A and 2B, bent end part of the door sash does not contact the part of the frame members fitted in the mold, as recited in claims 11 and 12. When the molten metal is poured into the mold, since aluminum material is easily deformed with heat, the deformation of the aluminum may be increased by the heat of molten metal. Thus, as a benefit of the claimed invention, if a deformation, such as expansion and contraction, of the frame member arises, since each frame member does not contact with the other, and the space for allowing the deformation is provided in the mold, the affect of the deformation is absorbed in the mold.

Furthermore, in the present invention, the bent end part is fitted in a fitting groove provided in the mold. The fitting groove has the same shape as the bent end part of the door sash, and a substantial portion of the bend end part is supported within the fitting groove, as also recited in claims 11 and 12.

Thus, as a further benefit of the claimed invention, when the bent end part is fitted into the fitting groove, since the slide of the bent end part is disturbed by the shape (curved shape) of the fitting groove, the position of the bent end part does not shift easily, and the positional accuracy of the door sash and the mold is maintained.

Therefore, in the present invention, since the positional accuracy of the door sash and the mold is maintained, the positional accuracy of the door sash and other frame members after molding is also highly maintained.

Therefore, as a further advantage, if door components are assembled by utilizing the presently claimed method, the dimensional stability of the door can be highly improved, the occurrence of the door flapping at the time of driving the vehicle can be prevented, and the generation of the whistling sounds, which are caused by the draft of the door, can be prevented.

However, contrary to the present invention, in AAPA, Ruehl, and Leith, the fitting groove of the curved shape is not provided. Thus, the positional accuracy between each of the frame members cannot be obtained. Furthermore, the fitting groove, which has the same shape as the shape of the bent end part, and which supports a substantial portion of the bent end part of the door sash, is neither disclosed nor suggested in the AAPA.

Therefore, as discussed above, Applicants submit that AAPA, Ruehl and Leith, either alone or in combination, fail to disclose or suggest the claimed invention.

Thus, it is respectfully submitted that the Applicants' invention, as set forth in claims 3 and 7, is not obvious within the meaning of 35 U.S.C. § 103.

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding rejections, allowance of claims 3 and 7, and the prompt issuance of a Notice of Allowability are respectfully solicited.

If this application is not in condition for allowance, the Examiner is requested to contact the undersigned at the telephone listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing docket number 106145-00021.**

Respectfully submitted,

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